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Analytics in Action: Breakthroughs and Barriers on the Journey to ROI

A Perspective from Accenture
Analytics, with Findings from a
Survey of Analytics Practitioners

A large, thick red chevron pointing to the right, positioned behind the text "High performance. Delivered."

High performance. Delivered.

A person with blonde hair, wearing a light blue shirt and dark pants, is walking up a modern staircase with a metal railing. The background is a clear blue sky with some light clouds. The text "WE SPEAK ANALYTICS" is written in large, bold, white capital letters on the side of the staircase.

WE SPEAK ANALYTICS



The adoption of analytics by businesses and organizations has been surging in recent years, particularly since the appearance of *Competing on Analytics: the New Science of Winning* by Thomas H. Davenport and Jeanne G. Harris in 2007.¹ Where does the practice of analytics stand today, and how are companies implementing this potent new approach to decision-making? Most importantly, is the practice delivering on the promise?

1. Davenport, Thomas H. and Jeanne G. Harris.
Competing on Analytics: the New Science of Winning.
Harvard Business School Publishing Corporation, 2007.

Analytics Arising

Adoption is Up, and Leadership is On Board

Even before many enterprises achieve measurable Return on Investment (ROI) from their current analytics capabilities, disruptive new forces and pressures are turning the journey to ROI into a thrills-and-spills obstacle course. Every analytics practitioner must contend with the advent of Big Data, not to mention accelerating technological innovation, rising demands for more sophisticated predictive applications, and the tricky task of embedding analytics across functional domains and enterprise-wide processes.

Getting analytics right requires clear vision, a steady hand, precision engineering and a readiness to make course corrections while in motion. Are today's users of analytics up to the challenge?

To answer these questions, Accenture Analytics set out to survey current analytics practitioners. Six hundred telephone interviews were conducted in August-September 2012 among Director-level executives and equivalent managers within enterprise-level companies (1,000+ employees) based in the US and UK who have knowledge of and/or responsibility for analytics within their organization. This research, following on our 2009 survey that provided a preliminary profile of the business analytics user, gives a current and expanded perspective on the breakthroughs and barriers encountered by enterprises as they put analytics to work today.

Analytics is on the Rise and on the Agenda

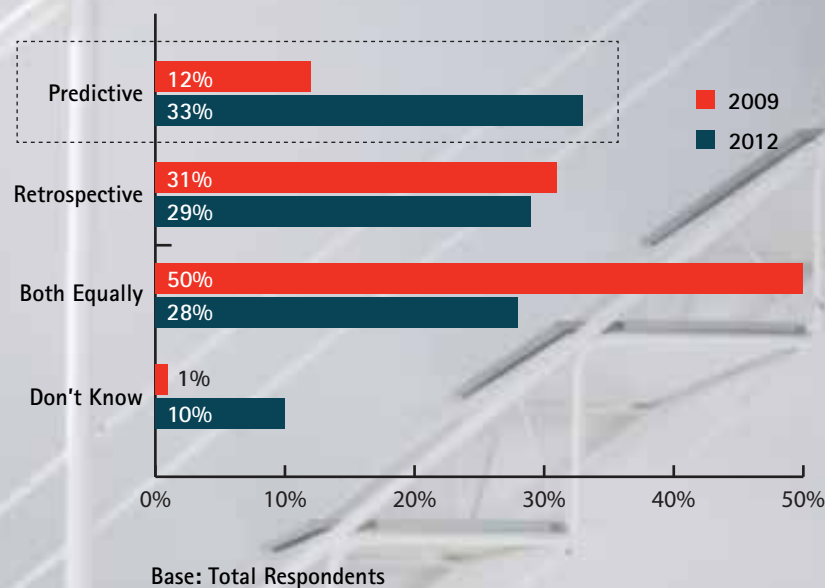
Analytics users tell us that analytics has arrived, is in wide use and is securely on the C-suite agenda. The use of analytics to aid decisions has increased since 2009, and there has also been a definitive increase over the same period in the integration of analytics across the enterprise. One-third of companies surveyed report that they are aggressively using analytics across the entire enterprise. Fewer than 10 percent of respondents report that their companies are not making any use of analytics, and fewer participants than in 2009 state that their use of analytics is hindered by lack of data, technology, analytical skills and/or senior management support.

Two-thirds of firms report having appointed a senior figure such as a "chief data officer" to lead data management and analytics in the last 18 months. Even among companies that did not make such an executive appointment, a large majority (71 percent) expect to do so in the near future.

Strikingly, 68 percent of survey respondents rated their senior management team as a whole to be highly or totally committed to analytics and fact-based decision-making. Signals of commitment range from leading by example in demanding fact-based decision-making, and in specific actions such as hiring analytical talent, making investments in tools and software, and expecting a clear return on analytics investments.

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Figure 1: The Surge in Predictive Analytics



A Surge in Predictive Analytics

As the pace of change drives businesses to be more nimble, and as enterprises become more skilled in the advanced application of analytics, it is unsurprising to see more than twice as many organizations reporting that analytics is being used as a primarily predictive tool today than in 2009 (Figure 1). Our first survey found half of all users applying analytics retrospectively and predictively in equal measure, and only 12 percent of organizations applying analytics primarily in a predictive mode. By 2012, the primarily predictive use of analytics has nearly tripled in size to 33 percent.

This impressive surge reflects a growing sophistication in analytics capabilities that anticipate tomorrow rather than explain yesterday. Despite this surge, the desire significantly exceeds the current capability, as the demand for predictive analytics vastly exceeds the supply. While roughly a third of companies are applying primarily

predictive techniques, nearly twice as many respondents—60 percent—report that internal customers are asking them to predict trends, not just review and report on what is happening in their organization.

The Analytics Capability Gap

This analytics capability gap is a recurrent theme of the survey findings, with companies scouring the globe to source the analytics talent they know they lack. Practitioners are confident that analytics can deliver value but are frustrated that current capacity falls so far short of their aspirations.

Comments by retailing executives give a feel for the day-to-day pressures being felt among users to make smart decisions more rapidly, despite limited resources. One reported the need "...to analyze trends at a faster rate than we have in the past. The customer base has become more educated and tech-savvy, which requires us to be

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2/3

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much more flexible and nimble...we need to have analytics at our fingertips that can... make decisions very quickly."

Another cited the impact of social channels on the media mix: "Three or four years ago we wouldn't have been talking about how do we try and incorporate social media data into our data structure, whereas now we have to...the landscape changes almost on a weekly or monthly basis."

Having Won Acceptance, Now What?

Survey results indicate that most analytics implementations to date have been tactically focused; more than half of the companies surveyed are using analytics in specific functional areas. Accenture Analytics believes that companies wanting to compete more aggressively with analytics will move rapidly to industrialize the discipline on an enterprise-wide scale, redesigning how fact-based insights get embedded into key processes, leading to smarter decisions and better business outcomes.

Most organizations measure too many things that don't matter, and don't put sufficient focus on those things that do, establishing a large set of metrics, but often lacking a causal mapping of the key drivers of their business. Accenture studies show that only 20 percent of organizations claiming to have a good performance management capability have any proven causal link between what they measure and the outcomes they are intending to drive.²

The Bottom Line: When Fast isn't Fast Enough, Win with Analytics

Measure what matters, especially when what matters is changing constantly. Given the rapidly evolving contexts in every industry, from banking to telecom to public service to healthcare, it is critically important for organizations to reassess what they measure, both internally and externally, in order to drive faster and better decision-making. Innovating around the sources of your data is just as important as the innovative decisions you make based on your data. Establishing clear causal links between data and the insights, actions and outcomes flowing from the data all depends on making certain you have the relevant data as your starting point, and recognizing what is relevant today may become quite irrelevant tomorrow.

Practitioners must move beyond traditional sources of data in order to seize the opportunities for new insights being created by new sources of data such as these:

- Text analytics from social media and digital interactions
- Voice analytics from call center interactions
- Monitoring the customer experience in real time using web analytics
- Seeing things from the sky (geospatial data)
- Understanding patterns of physical movement from geo-location data
- Monitoring movement (visual data)
- Understanding attitudes/behavior (customer, employee)

Our research shows that greater use of analytics is supporting firms as they cope with the inexorable acceleration in the pace of change. If you expect to surpass competitors in the race to keep up with change in the marketplace, you want analytics on your side.

2. Accenture Research. Getting Serious About Analytics: Better Insights, Better Outcomes. <http://www.accenture.com/us-en/Pages/insight-analytics-actionable-data-insights-summary.aspx>

Analytics in Practice

Key Success Factors: Functional Focus, Data Expertise, Sourcing Strategy

Top-line readings from practitioners of analytics are encouraging: usage is on the rise, enterprises are expanding predictive capabilities, and leadership is supportive. Drilling down into the details of how enterprises put analytics into practice reveals a more nuanced portrait. Effective application of analytics requires changing long-established business habits and processes. Such changes are never easy, just as the optimal ways of embedding the power of analytics in business operations are never obvious.

Functional Analytics with a Customer Focus

Survey results indicate that growth in use of analytics is predominantly found at the functional unit level, particularly in customer-centric areas (see Figures 2 and 3). More than two-thirds of firms (69 percent) use analytics to drive decisions around customer retention and acquisition, and those firms are seeing tangible outcomes.

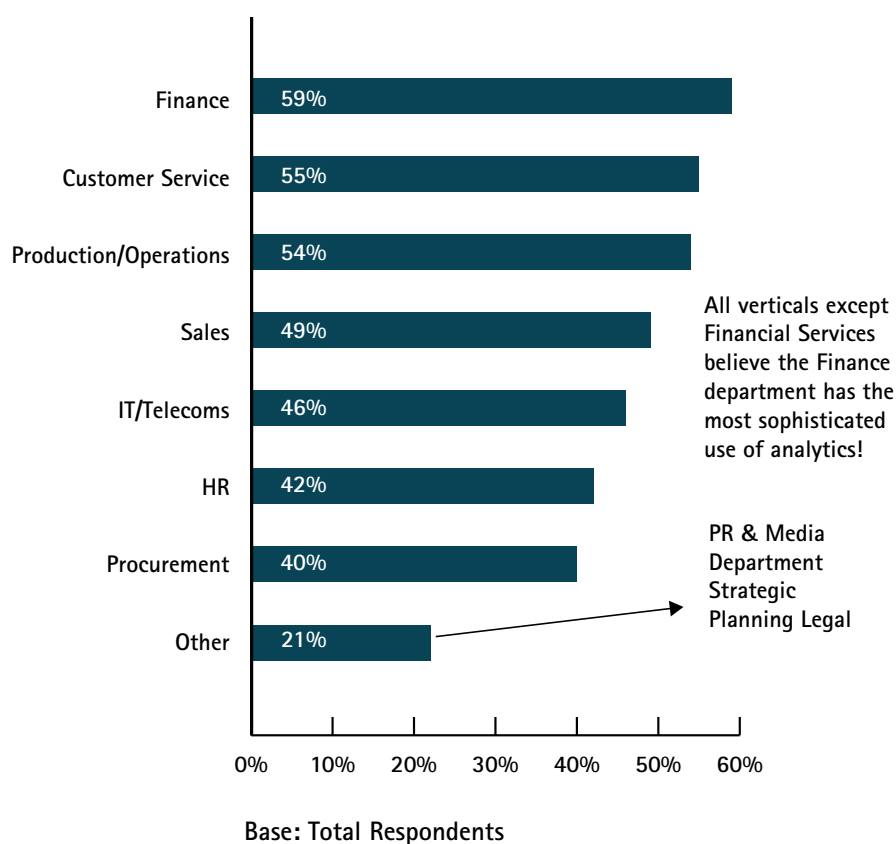
Some 60 percent of practitioners are using analytics to generate a better customer experience, with more than half (52 percent) seeing strong outcomes as a result. Business

users are applying analytics to set targets more consistently in marketing and sales than in other functions such as legal and human resources.

While the application of analytics in many functional areas is growing, the direct relevance of analytics to the customer experience is indisputable. In consequence, businesses today no longer have a myopic view of the customer. As one sales executive at a UK financial services firm tells it, "We used analysis earlier to understand our potential customer base...now we use it to understand each customer's needs, in order to personalize the services we can offer." With greater access to multiple channels, there is a greater need to manage all these channels. Mobile technology and the web have driven companies to need analytics, not just to want it. All these forces are driving demand for smarter decision-making. Using data to delve deeper into consumer priorities and preferences has enabled firms to be smarter in recognizing each customer as a "market of one", and of customizing key decisions accordingly.

A marketing executive at a leading retailer in the UK echoes the comments of many when he says, "It's the online channels. The majority of our sales come through an online channel and it's a huge shift from where we were before. So a desire to understand what customers were doing when they visited our websites was key." A product development executive at an American retailer confirms the predictive power of customer-focused analytics, reporting that "Three years ago we were very good at recognizing and analyzing when customers made a purchase. However, we did not have an understanding about what they were doing pre-purchase."

Figure 2: Analytics Applied to Functional Areas



Consumers are becoming more than faceless transactions, and companies now have rich channels to communicate with consumers in a much more personal way. Visionary analytics practitioners are seeing a unique opportunity to leverage social media, mobile communications channels and context-based services to nurture authentically personal relationships with consumers once again, and to let those relationships drive revenue growth. Accenture research on how the changing consumer is energizing global growth reports that 83 percent of executives see growth opportunities in changing consumer behaviors. Consumer behavior-driven markets are projected to grow 10 times faster than developed economies by 2016.³ To learn more, visit [accenture.com/globalgrowth](http://www.accenture.com/globalgrowth).

Data-Driven Insights

Active users of analytics see data as an increasingly valuable source for generating new ideas and opportunities for the business (see Figure 4). When asked about the extent to which data provides the business with an important tool for identifying new opportunities, respondents who rely on data "to a great extent" for new ideas more than doubled in 2012 to 25 percent, up from 12 percent in 2009.

More than six in 10 firms (62 percent) rank "quicker/more effective decision-making" as a top priority from the use of analytics in their enterprise, along with improved efficiency and productivity and higher market performance and sales. In yet another manifestation of the current analytics capability gap relative to the desire, it is interesting to note that while more than six in 10 users rate faster, better decision-making as a priority, only one in four—the 25 percent seen in Figure 4—habitually rely on data as a source of inspiration or basis for decision-making.

Respondents report that it is of immense value to model "what if" scenarios to aid decisions in near-real-time environments.

Figure 3: Analytics and the Customer

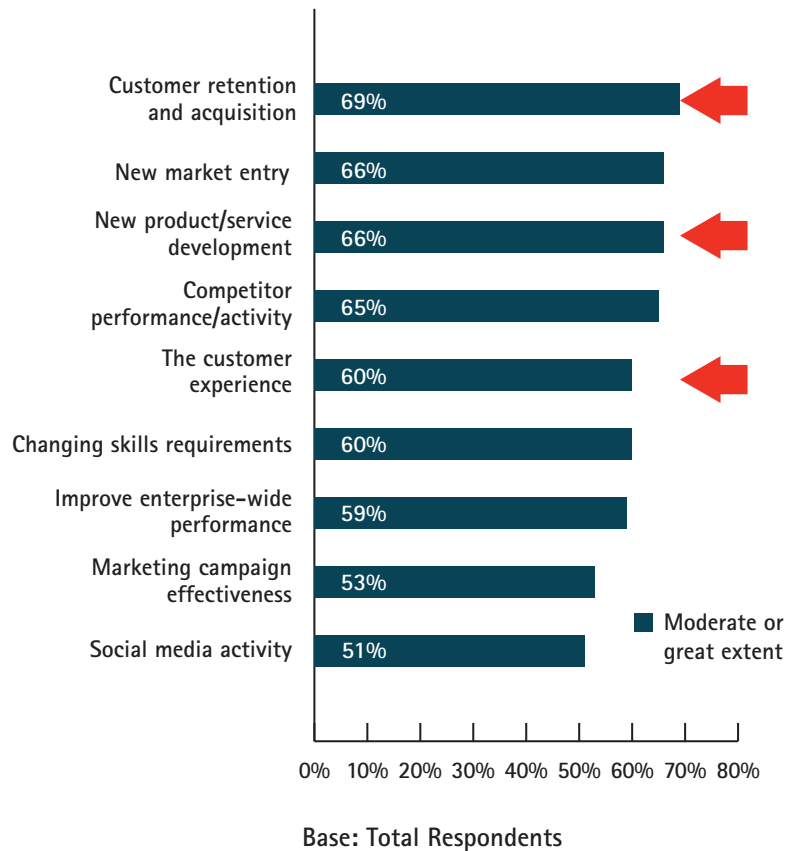
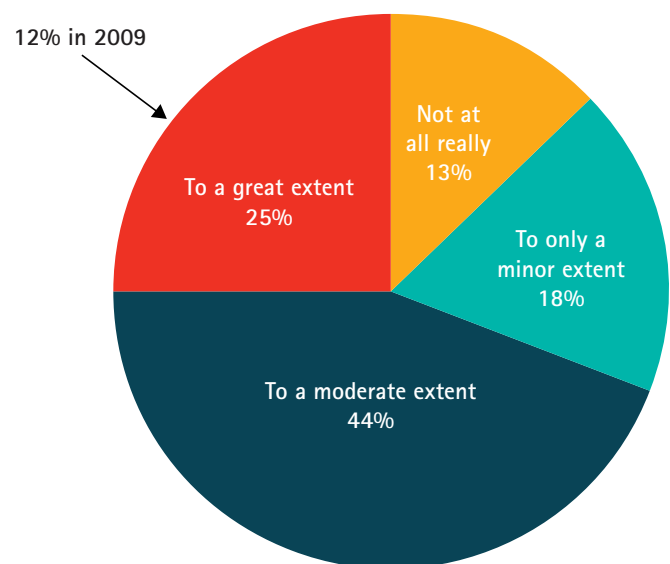


Figure 4: Data as a Source of Inspiration



3. Accenture Research. *Energizing Global Growth: Understanding the Changing Consumer*. <http://www.accenture.com/globalgrowth>

An American retailing executive expressed it this way: "...customers are faster to move than they used to be...we need to be faster as well and need to analyze trends at a faster rate than we have in the past... For that we need to have analytics at our fingertips that can look at different ways very quickly and make decisions very quickly."

Data-Based Decision-Making

Changing attitudes on the role of data in decision-making may still be a work-in-progress for many executives, as seen in Figure 5. In light of the continuing importance of intangible factors such as "intuition, personal experience and consultation," a realist may conclude that data-based approaches still lose out to the instinctive style of decision-making. As a US executive says, "Sometimes in business there's that gut instinct...how to take that information and apply it to make business strategies work is one of the biggest challenges."

Accenture's point of view is that we can support the view that analytics users are now including the scientific side—consideration of simple data and more complex data analysis—in the mix with intuition and experience, a mix that collectively makes up the art and science of decision-making.

With business operations accelerating and decision-making occurring with real-time immediacy, the weighting of these tools will inevitably need to shift in favor of data-based approaches. Respondents note that the ability to react quickly to changes in the market yields rewards in terms of new business and customer satisfaction. These executives say that as market dynamics change, their use of analytics will help them drive more value for the business by providing data that is easy for department heads to understand, and therefore more helpful in making decisions.

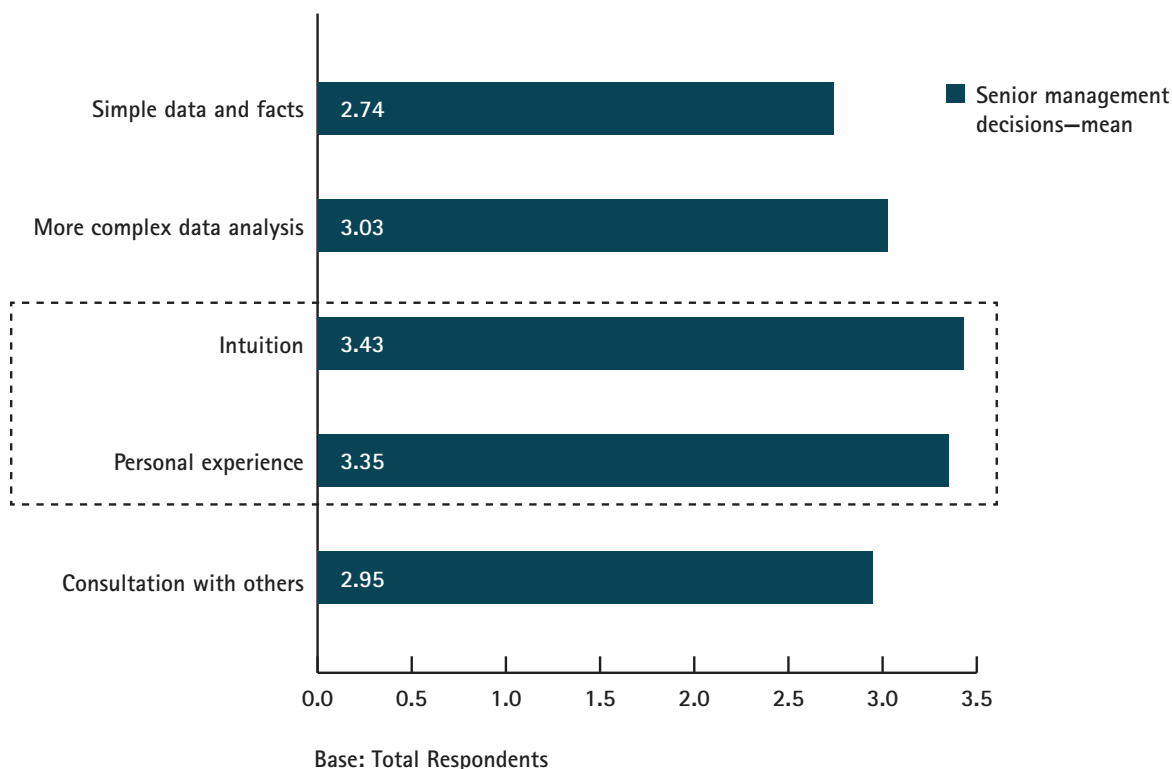
83%

of executives see growth opportunities in changing consumer behaviors

58%

of respondents identify "outcome from data" as a key analytics challenge

Figure 5: The Art and Science of Decision-Making



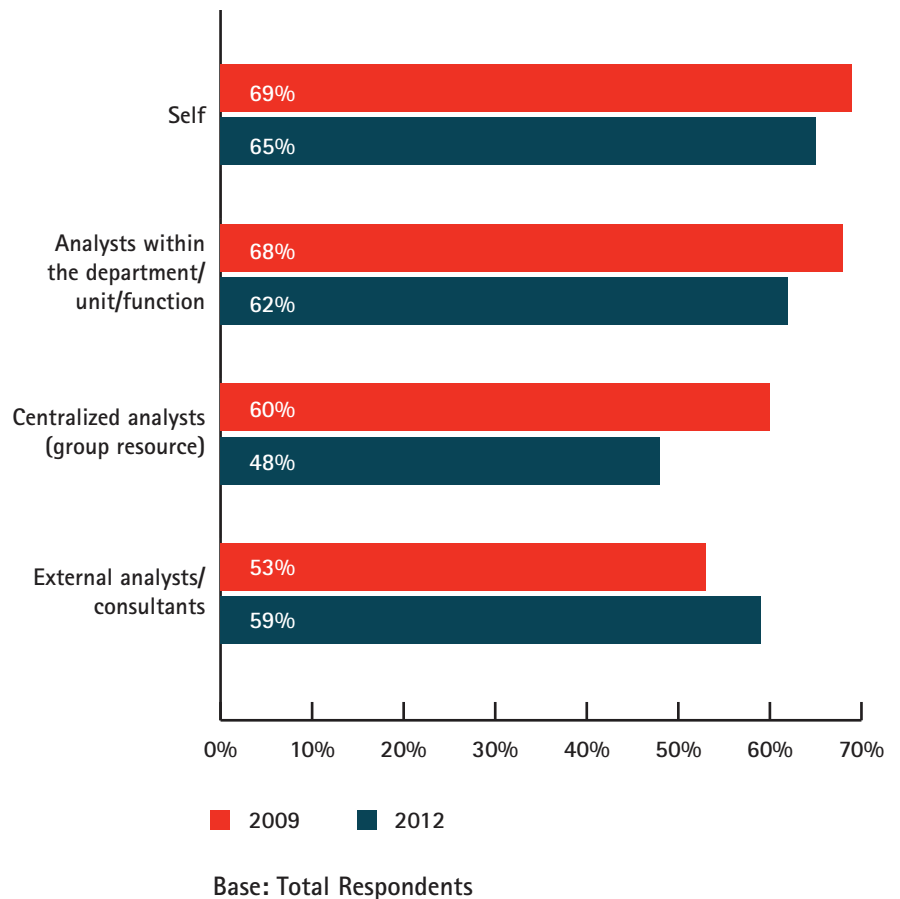
Sourcing Analytics Talent

As the role of data in decision-making grows, having the right people working with the data has never been more critical. As one respondent noted, "The ability to take analytics and manipulate it in a way that department heads understand and can connect with is critical to stay competitive." A US financial services analytics specialist places equal stress on the quality of analytics professionals: "Finding the right tools and the right skills and people has always and will always be a challenge as tools are getting better every day and we need people who can understand this." One IT executive at a UK retailer sees the war for talent this way: "There is a real demand to get both more insight and more intelligence, but it's hard to find these people."

Constraints on the analytics talent pool reach across industries and around the world. In the US and the UK alone, jobs demanding STEM skills—advanced knowledge in science, technology, engineering and mathematics—are projected to grow five times as fast as jobs in other occupations by 2018, and four times faster than that in information-intensive industries such as financial services. Emerging economies are producing STEM talent in far greater numbers than developing economies, but it is still not enough to meet the likely demand for these skills.⁴ The severe shortages in supply of analytics professionals make it imperative for analytics users to develop comprehensive strategies for building, hiring or sourcing their required analytics resources. To read more about finding and accessing critical skills in the emerging global labor market, visit accenture.com/STEMtalent.

Nearly six in 10 firms (59 percent) report turning to external analysts and consultants for assistance, up from 53 percent in 2009. These findings may reflect pressures exerted by the fluctuating workloads endemic to the practice of analytics. As organizations encounter seasonal increases or decreases in demand for analytics services, they may be finding it more cost-effective to go outside the enterprise for additional capacity, rather than to hire permanent analytics staff, many of whom may be under-utilized during nonpeak periods of the business cycle.

Figure 6: Sources of Analytics Talent



A shift toward external analysts and consultants surfaces when firms are asked to rank the importance of the contributions made by different analytics teams. More than half the firms (51%) rate the contribution being made by external analysts and consultants as "important or very important," an increase from 44 percent in 2009.

The Bottom Line: Have the Right People in the Right Place at the Right Time

Accenture Analytics believes that having the right people focused on the right set of problems is one of the most important components of an effective analytical capability. Companies need to have deep functional skills and deep industry context, together with an optimal sourcing strategy and structure for accessing scarce skills as needed. Increasingly, this sourcing strategy will have to include the ability to scour the globe for the necessary people.

This new reality can be seen in comments from one survey respondent, an analytics specialist working in a US financial services firm: "Finding the right tools and the right skills has always and will always be a challenge...." Rohit Tandon, worldwide head of analytics for HP, acknowledges the same challenge when he says, "My biggest talent imperative today and going forward is to ensure that our skills are sourced globally and not just locally. The right talent could be anywhere in the world."⁵

4. Accenture Research. *Where Will All the STEM Talent Come From?* <http://www.accenture.com/STEMtalent>

5. Accenture Research. *Where Will All the STEM Talent Come From?* <http://www.accenture.com/STEMtalent>

Achieving ROI on Analytics

From Insights and Actions to Outcomes

The promise of analytics is expansive: data-based decisions, leading to clear business outcomes, yielding a measurable return on investment. Even though the business discipline is still developing, what is the verdict? Positive, but cautiously so, suggesting that some enterprises are successfully leveraging the power of analytics within functional areas and across functions, while many others are still struggling to see a meaningful Return on Investment (ROI).

One respondent captures the provisional nature of his verdict well when he says, "There has been a sizable investment and I believe that the early signs are extremely positive. I think probably over the next six to 12 months, if we have a similar conversation, you will be speaking to a very happy person."

More Strivers than Clear Winners

While more than one-third of firms (35 percent) report some degree of satisfaction with analytics, only slightly more than one in five firms (22 percent) state that they are "very" satisfied with the outcomes they have realized as a result of their analytics investment (see Figure 7).

The Journey to ROI

Why are more companies not seeing the ROI they expected? For some, the best answer may be the simplest: "Too soon to tell." Others may be focused on the wrong results, as witnessed in this statement from

a retail executive in the US, who is focused on traditional growth while ignoring multi-channel customer metrics: "We expect to generate store-for-store growth and we are organically growing the stores that already exist today. We are improving the assortments and improving the customer satisfaction and driving more business in each one of the stores. We just have a bit more to go before seeing true ROI." Yet another executive in the UK financial

services arena is waiting for a day that might never arrive: "We are well aware that the implementation and use of relevant skills and technology will take its time. Only when everything gets streamlined can we expect significant return on investment."

As these comments suggest, when analytics does not work as expected for a company, it is helpful to look for the source of the problem in the three most common reasons why:

Figure 7: Analytics Winners and Strivers

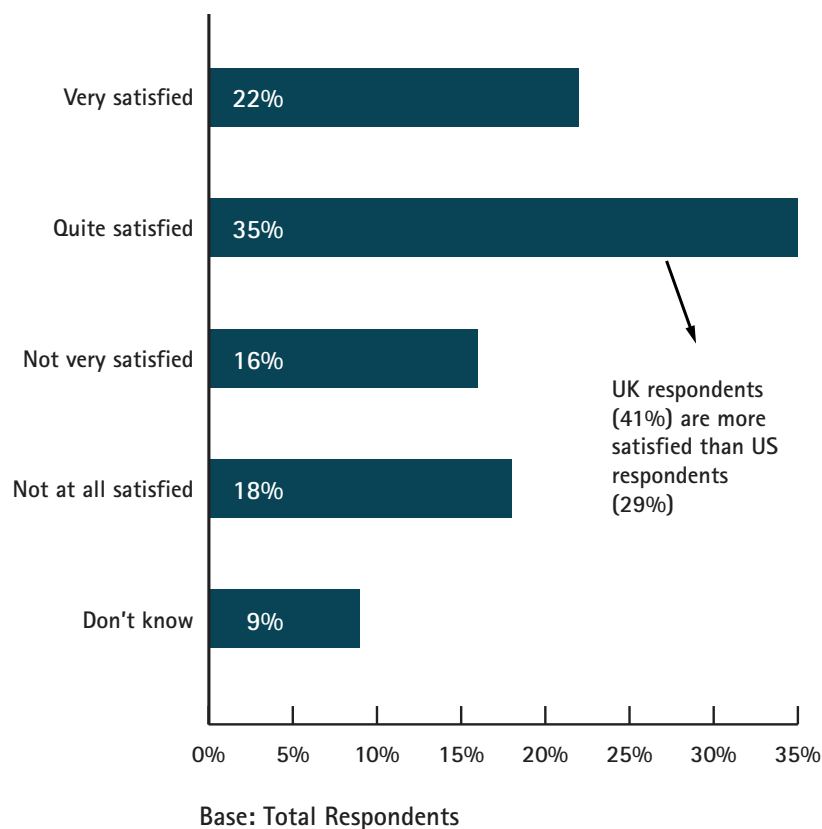
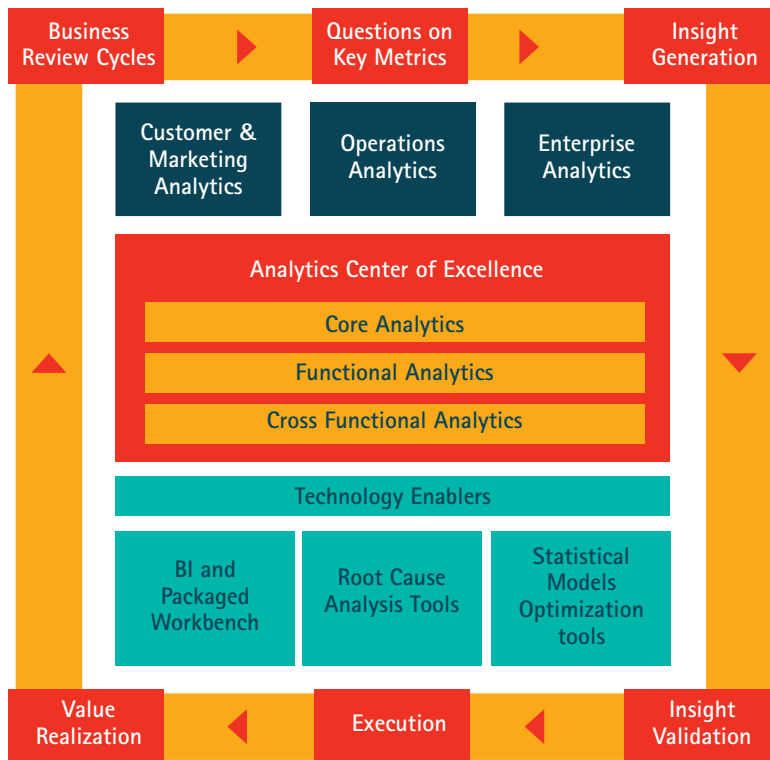


Figure 8: Closing the Loop



- 1. Measuring the Wrong Metrics:** Companies are measuring the wrong things or have gaps in the way they are measuring (e.g. around the customer experience).
- 2. Flawed Insights:** Users are not identifying and validating cross-functionally the correct insights and associated actions suggested.
- 3. Faulty Execution:** Companies fail to embed analytical insights in key decision processes across the enterprise so that analytics capabilities are linked to business outcomes.

Using this approach to understand root causes preventing the achievement of expected business outcomes enables organizations to course correct in a closed learning loop process. The smartest businesses are creating a virtuous feedback loop that lets them collect data, analyze the data, harvest insights and then make decisions and respond in an increasingly agile style (see Figure 8).

When the sequence is complete, they do it all again, revisiting questions on a continuous basis to compare new data and new insights against changing business conditions and

strategies. (See sidebar on ROI currently being achieved in the pharmaceuticals industry.)

Accenture Analytics believes that refining the metrics used to measure analytic impact is an indispensable first step that will yield an invaluable prize; greater and more credible clarity around ROI. Companies should focus on getting the data that is relevant to business decisions and to business strategy, including big-data gathering in areas such as geometrics, telematics, and other unstructured data. Once businesses start using analytics for business decision-making, they are more likely to get a better read on their ROI.

Closing the Loop: Connecting Analytics with Outcomes

An important clue in the elusive search for ROI can be seen in the high number—58 percent of respondents—who identify "outcome from data" as a key analytics challenge.

Establishing the linkage between data collection and analysis on the one hand, and the actions and outcomes predicated by analytics, is proving to be a more difficult task for many than data collection or data integration. Although data consistency, accuracy and completeness generate relatively high scores from roughly half of the firms, barely four in 10 (39 percent) state that the data they generate is "relevant to the business strategy." For the majority, there is a profound disconnect between the data being gathered and the business strategies, tactics and outcomes they pursue. In these firms, analytics appears to be used primarily as a tactical tool, rather than for strategic decision-making.

For such firms, the clear remedy is to move to develop an enterprise analytical capability, where the pieces integrate to solve cross-functional and strategic business problems. This requires more effort, but the enterprise-scale results in revenue growth, profitability, return on capital, customer value and other measures of value are bound to make the effort worthwhile.

Real-Time ROI Results in Pharmaceuticals

Enterprises in the pharmaceutical sector are realizing measurable ROI by transforming their enterprises into customer-centric businesses, with assistance from Accenture Interactive. Accenture's Marketing Intelligence Factory, built expressly for pharmaceutical companies, generates a multidimensional 360-degree view of the pharma customer that puts insights, data and ROI simulation tools in the hands of field personnel via mobile devices. Live what-if and ROI simulations let sales forces test disruptive scenarios and deal trade-offs in real time, informing and accelerating complex decisions under negotiation pressure *prior* to completing the transaction.

The Bottom Line: Industrialize the Insight-to-Action-to-Outcome Sequence

Accenture Analytics believes it is imperative to infuse insights into operations, embedding analytics into business processes in a robust, industrialized way and generating the right action recommendations to the right role at the right time. High-performing businesses make analysis an integral part of everyday business processes—the methods by which work gets done and value is created. Developing a repeatable decision-making process that leverages data and analytical methods should be a high priority for every organization interested in analytics. Once this virtuous cycle has been industrialized, embedding analytics into the management and decision processes with a critical component being the asking of the question, "Did we achieve the ROI we wanted?" If the answer is no, refocus and try again, learning as you go.

Prime Time ROI for Broadcast/Cable Operators

Television channels and related communications companies must market multiple programming assets across multiple channels and devices. The television industry is leveraging analytics in combination with smart-tv technologies, advertising and research. Accenture Interactive's TV Viewing Recommendation Engine combines data collection and data transformation to create TV program personalization—individual recommendations on programs and channels based on customer insight. Recommendations first reassure by identifying "best" programs in preferred categories, then suggest new programs the viewer normally would not watch. The results are having a direct impact on television's ROI: increased viewing levels, reduced churn and rising customer satisfaction.

About the Research

The findings contained in this report are based on 600 telephone interviews undertaken during August and September 2012 among Director-level executives and equivalent managers within enterprise-level companies (1,000+ employees) located in the UK and US who have knowledge of and/or responsibility for analytics within their organization. Interviews were conducted among organizations from the public sector, financial services, resources, communications and hi-tech and products (retail & manufacturing) industry sectors.

To obtain a full presentation of the survey data and findings, contact Accenture Analytics at accenture.com/analytics.

About Accenture Analytics

Accenture Analytics delivers insight-driven outcomes at scale to help organizations improve performance. Our extensive capabilities range from accessing and reporting on data to advanced mathematical modeling, forecasting and sophisticated statistical analysis. We draw on over 12,000 professionals with deep functional, business process and technical experience to develop innovative consulting and outsourcing services for our clients in the health, public service and private sectors. For more information about Accenture Analytics, visit www.accenture.com/analytics.

About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with approximately 259,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US\$27.9 billion for the fiscal year ended Aug. 31, 2012. Its home page is www.accenture.com.

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